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10/540,858	06/27/2005	Takeshi Aso	040302-0491	2363
22428	7590	10/30/2007	EXAMINER	
FOLEY AND LARDNER LLP			PARSONS, THOMAS H	
SUITE 500			ART UNIT	
3000 K STREET NW			PAPER NUMBER	
WASHINGTON, DC 20007			1795	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/540,858	Applicant(s) ASO, TAKESHI	
	Examiner Thomas H. Parsons	Art Unit 1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 June 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 June 2005 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities:

Page 4, line 13, suggest changing "as an en electric" to --as an electric--.

Page 20, line 2, suggest changing "basses" to --basis--.

Appropriate correction is required.

Abstract

2. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

The abstract of the instant specification is approximately 155 words in length.

The Examiner suggests amending the abstract as appropriate to within the range of 50 to 150 words.

Drawings

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description:

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Reference sign "S26", as mentioned on page 18, line 2.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishikawa (US 6,520,273) in view of Yamaguchi et al. (US 6,480,767).

Claim 1: Ishikawa in Figure 1 discloses a fuel cell system (10) comprising:

a fuel cell (40) and a secondary cell (60);

a load set (motor 80 and auxiliary equipment); and

a controller (100). See col. 1: 66-col. 3: 2, col. 3: 27-col. 8:55; col. 9: col. 10:11-col. 13:

7.

Ishikawa does not disclose a *combination* of a fuel cell (40), a *power distributor* connected to the fuel cell, and a secondary cell (60) connected to a *power distributor*; and a load set connected to a *power distributor*.

Yamaguchi et al. in Figures 2 and 76 disclose a *power distributor* (distribution controller 6) connected to the fuel cell, and a secondary cell (60) connected to a *power distributor*; and a load set connected to a *power distributor*.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the fuel cell system of Ishikawa by incorporating the power distributor of Yamaguchi et al. because Yamaguchi et al. teach a power distributor that would have provided a control system for a hybrid vehicle in which the efficiency over the entire driving region is taken into consideration, and in which the vehicle can run while selecting a condition having more suitable predetermined physical quantity such as the fuel consumption rate or amount of exhaust gas thereby improving the overall performance and efficiency of the fuel cell system.

The recitation “adapted, during distribution of power from the power distributor to the load set after a startup completed with the fuel cell and the secondary cell warmed up, to raise a temperature of the fuel cell when the fuel cell fails to meet a first criterion for a service thereof, and to raise a temperature of the secondary cell when the secondary cell fails to meet a second criterion for a service thereof” has been considered, and construed as a functional limitation that adds no additional structure to the fuel cell system. However, because the fuel cell system of the Ishikawa combination is structurally similar to that instantly disclosed, it appears capable of functioning as claimed.

Further, Ishikawa disclose a control unit 100 including a controller and an input-output port. The controller includes a CPU, a ROM, and a RAM. The CPU carries out required operations according to control programs, so as to implement series of processing and controls. The ROM is a memory, in which the control programs and control data used for execution of the operations are stored in advance. The RAM is a memory, in which a variety of data obtained through execution of the operations are temporarily stored. The input-output port transfers the input results of the measurements transmitted from the various sensors to the controller, and outputs a variety of control signals to the respective constituents according to the instructions of the controller. Therefore, it would have been within the skill of one having ordinary skill in the art at the time the invention was made to have modified the control unit with the data and instructions needed such that the fuel cell system of the Ishikawa combination provides the claimed function.

Claim 2: The Ishikawa combination further discloses that the fuel cell system has auxiliary equipment therefor as part of the load set. See, e.g., Yamaguchi et al., col. 5: 36-45.

The recitation “the controller is configured to effect an increment of power consumption at the auxiliary equipment, and to increase power generation of the fuel cell to compensate for the increment, raising the temperature of the fuel cell” has been considered, and construed as a functional limitation that adds no additional structure to the fuel cell system. However, because the fuel cell system of the Ishikawa combination is structurally similar to that instantly disclosed, it appears capable of functioning as claimed.

Claim 3: The rejection of claim 3 is as set forth above in claim 1 wherein the recitation “wherein the first criterion comprises a threshold for a possible generation of the fuel cell” has

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been considered, and construed as a functional limitation that adds no additional structure to the fuel cell system.

Claim 4: The rejection of claim 4 is as set forth above I claim 1 wherein the recitation “wherein the possible generation is estimated in terms of the temperature of the fuel cell” has been considered, and construed as a functional limitation that adds no additional structure to the fuel cell system.

Claim 5: Ishikawa in Figure 1 discloses a fuel cell having a fuel recirculating line (120) for fuel supply thereto (col. 6: 54-57).

The recitation “the possible generation is estimated in terms of a purge frequency of the fuel recirculating line”, for reasons as set forth above in claim 1, has been considered, and construed as a functional limitation that adds no additional structure to the fuel cell system.

Claim 6: The rejection of claim 6 is as set forth above in claim 1 wherein the recitation “wherein the second criterion comprises a threshold for one of a possible charge and a possible discharge of the secondary cell” has been considered, and construed as a functional limitation that adds no additional structure to the fuel cell system.

Claim 7: The Ishikawa et al. combination discloses a fuel cell system comprising a further comprising a vehicular portion including a passenger room (see Ishikawa, col. 4: 51-56 wherein the vehicle with a fuel cell would obviously comprise a passenger portion), a cell chamber configured to accommodate the secondary cell (see Ishikawa, col. 4: 51-56 wherein the vehicle with a fuel cell would obviously comprise a chamber for the battery), and a fan (i.e. an air conditioner which obviously would comprise an fan or a blower)(see Yamaguchi, col. 5: 46-53).

The recitation “operable to introduce air from the passenger room to the cell chamber, wherein the controller is configured to operate the fan to raise the temperature of the secondary cell when a third criterion for the passenger room is met, and the third criterion comprises a decision for a representative temperature of the passenger room to be higher than a representative temperature of the cell chamber” has been considered, and construed as a functional limitation that adds no additional structure to the fuel cell system. However, because the fuel cell system of the Ishikawa combination is structurally similar to that instantly disclosed, it appears capable of functioning as claimed.

Claim 8: The rejection of claim 7 is as set forth above in claim 1 wherein the recitation “wherein the third criterion comprises a threshold for a changing ratio of the representative temperature of the passenger room” has been considered, and construed as a functional limitation that adds no additional structure to the fuel cell system.

Claim 9: Yamaguchi et al disclose a fan comprises an air fan (i.e. an air conditioner which obviously would comprise an fan or a blower)(see Yamaguchi, col. 5: 46-53).

The recitation “operable to cool the secondary cell” has been considered, and construed as a functional limitation that adds no additional structure to the fan (see also claim 1 above).

Claim 10: Ishikawa in Figure 1 discloses a fuel cell system (10) comprising:
a fuel cell (40) and a secondary cell (60);
a load set (motor 80 and auxiliary equipment); and
a control means (100). See col. 1: 66-col. 3: 2, col. 3: 27-col. 8:55; and, col. 9: col. 10:11-col. 13: 7.

Ishikawa does not disclose a *combination* of a fuel cell (40), a *power distributor* connected to the fuel cell, and a secondary cell (60) connected to a *power distributor*; and a load set connected to a *power distributor*.

Yamaguchi et al. in Figures 2 and 76 disclose a *power distributor* (distribution controller 6) connected to the fuel cell, and a secondary cell (60) connected to a *power distributor*; and a load set connected to a *power distributor*.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the fuel cell system of Ishikawa by incorporating the power distributor of Yamaguchi et al. because Yamaguchi et al. teach a power distributor that would have provided a control system for a hybrid vehicle in which the efficiency over the entire driving region is taken into consideration, and in which the vehicle can run while selecting a condition having more suitable predetermined physical quantity such as the fuel consumption rate or amount of exhaust gas thereby improving the overall performance and efficiency of the fuel cell system.

The recitation “for, during distribution of power from the power distributor to the load set after a startup completed with the fuel cell and the secondary cell warmed up, to raise a temperature of the fuel cell when the fuel cell fails to meet a first criterion for a service thereof, and to raise a temperature of the secondary cell when the secondary cell fails to meet a second criterion for a service thereof” has been considered, and construed as a functional limitation that adds no additional structure to the fuel cell system. However, because the fuel cell system of the Ishikawa combination is structurally similar to that instantly disclosed, it appears capable of functioning as claimed.

Further, Ishikawa disclose a control unit 100 including a controller and an input-output port. The controller includes a CPU, a ROM, and a RAM. The CPU carries out required operations according to control programs, so as to implement series of processing and controls. The ROM is a memory, in which the control programs and control data used for execution of the operations are stored in advance. The RAM is a memory, in which a variety of data obtained through execution of the operations are temporarily stored. The input-output port transfers the input results of the measurements transmitted from the various sensors to the controller, and outputs a variety of control signals to the respective constituents according to the instructions of the controller. Therefore, it would have been within the skill of one having ordinary skill in the art at the time the invention was made to have modified the control unit with the data and instructions needed such that the fuel cell system of the Ishikawa combination provides the claimed function.

Claim 11: Ishikawa in Figure 1 discloses a fuel cell system (10) comprising:

a fuel cell (40) and a secondary cell (60);

a load set (motor 80 and auxiliary equipment); and

a controller (100). See col. 1: 66-col. 3: 2, col. 3: 27-col. 8:55; col. 9: col. 10:11-col. 13:

7.

Ishikawa does not disclose a *combination* of a fuel cell (40), a *power distributor* connected to the fuel cell, and a secondary cell (60) connected to a *power distributor*; and a load set connected to a *power distributor*.

Yamaguchi et al. in Figures 2 and 76 disclose a *power distributor* (distribution controller 6) connected to the fuel cell, and a secondary cell (60) connected to a *power distributor*; and a load set connected to a *power distributor*.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the fuel cell system of Ishikawa by incorporating the power distributor of Yamaguchi et al. because Yamaguchi et al. teach a power distributor that would have provided a control system for a hybrid vehicle in which the efficiency over the entire driving region is taken into consideration, and in which the vehicle can run while selecting a condition having more suitable predetermined physical quantity such as the fuel consumption rate or amount of exhaust gas thereby improving the overall performance and efficiency of the fuel cell system.

Further, Ishikawa disclose a control unit 100 including a controller and an input-output port. The controller includes a CPU, a ROM, and a RAM. The CPU carries out required operations according to control programs, so as to implement series of processing and controls. The ROM is a memory, in which the control programs and control data used for execution of the operations are stored in advance. The RAM is a memory, in which a variety of data obtained through execution of the operations are temporarily stored. The input-output port transfers the input results of the measurements transmitted from the various sensors to the controller, and outputs a variety of control signals to the respective constituents according to the instructions of the controller. Therefore, it would have been within the skill of one having ordinary skill in the art at the time the invention was made to have modified the control unit with the data and instructions needed such that the fuel cell system of the Ishikawa combination provides the

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control method comprising, during distribution of power from the power distributor to the load set after a startup completed with the fuel cell and the secondary cell warmed up: raising a temperature of the fuel cell when the fuel cell fails to meet a first criterion for a service thereof; and raising a temperature of the secondary cell when the secondary cell fails to meet a second criterion for a service thereof.

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Examiner Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thomas H. Parsons whose telephone number is (571) 272-1290. The examiner can normally be reached on M-F (7:00-3:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Pat Ryan can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


PATRICK JOSEPH RYAN
SUPERVISORY PATENT EXAMINER

Thomas H Parsons
Examiner
Art Unit 1795
